Agence spatiale canadienne | Canadian Space Agency

Canada

Earth Observation Express

Other Editions

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1. Climate Change Adaptation: Earth Observation Applications for Public Health

There is growing evidence that our climate is changing and that these changes are affecting the health and well-being of citizens in countries throughout the world, including Canada. In close collaboration with the Public Health Agency of Canada (Populations and the Environment Division), the European Space Agency, the Groupe de Recherche en Épidémiologie des Zoonoses et Santé Publique (GREZOSP) of the Université de Montréal, the Institut National de la Santé Publique du Québec and the United Nations Office for Outer Space Affairs, the Canadian Space Agency (CSA) Earth Observation Applications and Utilizations (EOAU) has participated to a workshop on "Space technology for public health actions in the context of climate change adaptation" on June 19-21 in Montréal, Canada. The workshop was held in the framework of the Canadian Public Health Association 2011 Conference. Over 40 participants from 12 countries contributed to five technical and strategic sessions featuring a total of 26 keynote presentations on various subjects dealing with the application of tele-epidemiology and tele-health to improve public health. CSA EOAU has delivered a presentation entitled "Tracking public health from space in the context of climate change: Earth Observation applications for disasters, preparedness, response and environmental monitoring". Many governmental and academic organizations participated to the success of the workshop. To learn more about the workshop and its outcomes, please communicate with: pascal.michel@phac-aspc.gc.ca and guy.aube@asc-csa.gc.ca or see up-dates at: www.medvet.umontreal.ca/grezosp/tele-epi2011.htm

2. Arctic Ecosystem: Yukon-Kuskokwim Delta

Originating on the northern border of British Columbia (Canada), the Yukon River flows some 3190 km across central Alaska in the US before emptying into Norton Sound. Together with the Kuskokwim Delta, it forms the Yukon-Kuskokwim Delta, one of the largest delta ecosystems in the world. The Yukon is one of the most important rivers in the world for salmon breeding and annually hosts the longest upstream migration of Pacific salmon stocks. According to anthropologists, it was also the main migration route for North America's first human inhabitants. This product was created by combining three Envisat Advanced Synthetic Aperture Radar (ASAR) (19 November 2009, 8 April 2010 and 13 May 2010) over the same area. The colours represent changes in

the surface between acquisitions: http://esamultimedia.esa.int/images/imageoftheweek/yukon_delta_ASA-WSM_20100513_H1.jpg. The Canadian Space Agency (CSA) is a cooperating member of the European Space Agency (ESA) and contributed to the development of Envisat Earth Observation (EO) satellite.

3. 2011: International Year of Forests

The United Nations has declared 2011 as the International Year of Forests. This year-long celebration presents an opportunity for Canadians to join the international community in raising awareness on how forests contribute to a healthy environment and to the quality of life enjoyed by people everyday. It is an occasion for us to showcase forest-related events and activities, as well as to demonstrate Canada's global leadership in sustainable forest management. Earth Observation (EO) satellites, like RADARSAT-2, can provide a cost-effective means of obtaining information, products and services in vast, barren, and often inaccessible forested areas and ecosystems. In close partnership with federal departments and agencies, the Canadian Space Agency (CSA) Government Related Initiative Program (GRIP) supports the development and demonstration of new applications that increase the benefits & effectiveness of Government of Canada services for Canadians through use of EO information. In the forest sector, GRIP has been developing and supporting multiple EO projects and initiatives, including partnerships with Environnement Canada, Natural Resources Canada and Parks Canada (i.e. wildfire operational systems; insects defoliation monitoring; green house gas reporting for international requirements; mapping of biomass carbon stock; operational satellite-based system for monitoring ecological integrity of Arctic national parks, etc.). To view exemples of EO forest related applications and products developed through GRIP, please visit: www.asc-csa.gc.ca/eng/programs/grip/archive_090604.asp. To learn more on the international year of forests, please visit: www.un.org/en/events/iyof2011/ or http://canadaforests.nrcan.gc.ca/article/internationalyearforest.

4. Monitoring Volcanic Ash and Impacts on Agriculture: CSA, NASA and World Bank Cooperation

Within the framework of the international Committee on Satellite Earth Observation (CEOS), the Canadian Space Agency (CSA) is collaborating with NASA on various projects helping to monitor, manage and respond to natural disasters. This partnership offers CSA and NASA the opportunity to share Earth Observation (EO) data acquired by Canadian and American satellites for the purpose of scientific research and operational applications. During the June 2011 eruption of the Puyehue-Cordon-Callue volcano (Chile), large amounts of ash and pumice were ejected into the atmosphere and subsequently deposited over large areas, threatening the health of many people. In Argentina, volcanic ash fall affected agriculture land as well as urban areas, such as Bariloche, Villa la Angostura, Neuquen and even the capital Buenos Aires. Argentina declared a health emergency and advised people in affected areas to stay indoors. The Ministry of Agriculture of Argentina requested assistance from the World Bank to determine the extent of the ash and its impact on the agriculture lands. The World Bank worked with CSA's Earth Observation Applications and Utilizations (EOAU) division and NASA to obtain EO satellite information related to the volcanic eruption. CSA has planned for the acquisition of several RADARSAT-2 scenes over the Puyehue-Cordon-Callue area in Chile and over some ash fall areas in Argentina and offered additional EO-related information with regard to ash fall. NASA provided access to MODIS as well as EO-1 ALI and Hyperion data. Based on the analysis of satellite data, geomatics experts at the World

Bank were able to produce an initial regional map showing the enormous aerial extent of ash clouds observed daily over parts of Chile and Argentina for most of the month of June, 2011.

5. Understanding the Relationship Between Ice and Climate: New Information of the Arctic

Spring 2011 was the third lowest Arctic ice extent recorded by satellite. To understand fully how climate change is affecting the fragile polar regions, there is a need to determine exactly how the thickness of the ice is changing. The first map of sea-ice thickness from the CryoSat-2 Earth Observation (EO) mission was revealed on June 21 at the Paris Air and Space Show. These new ice EO applications are set to change our understanding of the complex relationship between ice and climate. CryoSat-2 exceptionally detailed data have been used to generate this map of sea-ice thickness in the Arctic: www.esa.int/images/Arctic_Sea_Ice_Thickness-Jan-Feb-2011,0.jpg. To view the Antarctic ice sheet derived from CryoSat-2 data, please visit: www.esa.int/images/antarctic3,0.jpg. The Canadian Space Agency (CSA), as a cooperating member of ESA, contributes to the Earth Observation Envelope Program through which the CryoSat-2 Earth Observation (EO) mission is being coordinated.

6. Disaster Management: Assiniboine River Flooding

The 2011 Assiniboine River flood was caused by above average precipitation in Western Manitoba and Saskatchewan. This was a 1 in 300 year flood that affected much of Western Manitoba. The intentional breach and overland flooding began on Saturday May, 14. The resultant flooding was very slow moving and was expected to take several days to reach the La Salle River. The waters intentionally spilled from the Assiniboine were expected to cover 185 square kilometres (71 sq mi) and flood a possible 150 homes. To view a flood extent product derived from RADARSAT-2 24 hours after the controlled breach, please visit: http://ccrs.nrcan.gc.ca/images/flood_20110511_e.jpg

7. RADARSAT Constellation Mission: MDA Receives Amendments to Design Phase

MacDonald, Dettwiler and Associates Ltd. (MDA) announced on June 27 that it has signed three contract amendments with the Canadian Space Agency (CSA) totaling $10.4 Million (CAD), for the Design Phase of the RADARSAT Constellation Mission. The amendments serve to initiate the procurement of parts and equipment needed for the Build Phase, which will require a lengthy period of time to complete, and include tasks to add mission functionality. For more information, please visit: www.mdacorporation.com/corporate/news/pr/pr2011062701.cfm.

8. MDA to Help Russia to Enhance Maritime Safety

MacDonald, Dettwiler and Associates Ltd. (MDA) announced on May 31 that RADARSAT-2 information will be used by the Government of Russia to enhance their ability to provide critical information to support disaster relief, improve the safety of maritime navigation, and increase its ability to monitor, and respond to oil spills, etc. MDA's deliveries of two RADARSAT-2 ground station solutions to ScanEx Research and Development Centre in Russia, included downlinks from the RADARSAT-2 satellite along with maintenance, training and support, for a

contract value of over $4 million (CAD). The ground stations are located at the Samara State Aerospace University and the Northern Arctic Federal University, who will utilize the RADARSAT-2 data to support their educational and scientific programs. For more information, please visit: www.mdacorporation.com/corporate/news/pr/pr2011053101.cfm.

9. 2011 Canadian Remote Sensing Society Gold Medal Award

Talented, skilled, creative people are the most critical element of a successful national economy. It is through the talent of Canadians in their capacity as researchers, scientists, teachers, managers, and investors that we bring innovations to life. Dr Vern Singhroy, senior scientist at the Canada Centre for Remote Sensing (CCRS), received the 2011 CRSS Gold Medal Award at the 32nd Canadian Symposium on Remote Sensing/14ième Congrès de l'Association Québécoise de Télédétection (June 14-16) in Lennoxville. The CRSS Gold Medal Award was introduced in 1986 to recognize a significant long-term contribution to the field of Earth Observation (EO) in Canada. Over the last three decades, Dr Singhroy has made a huge contribution to Canadian and international Earth Observation (EO) science and programs at CCRS and prior to that, in private industry, academia (both college and university), consulting environments, and in provincial government service. Since 1990, Dr Singhroy has been the lead scientist in applications development for remote sensing in geology at CCRS. He is the Principal Scientist of the Radarsat Constellation Mission to be launched in 2015.

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